

MULTITHREADED PROCESSOR AND METHOD FOR SWITCHING THREADS

ABSTRACT OF THE DISCLOSURE

A processor includes primary threads of execution that may simultaneously issue
5 instructions, and one or more backup threads. When a primary thread stalls, the contents
of its instruction buffer may be switched with the instruction buffer for a backup thread,
thereby allowing the backup thread to begin execution. This design allows two primary
threads to issue simultaneously, which allows for overlap of instruction pipeline latencies.
This design further allows a fast switch to a backup thread when a primary thread stalls,
10 thereby providing significantly improved throughput in executing instructions by the
processor.